

EMI3P-ROG



Rogowski current sensor (20-4000 A)



Description

Current sensor based on the Rogowski principle, to be used in combination with the EMI3P-Y2R0 analyzer to measure current in single-phase, two-phase and three-phase systems.

Compact, flexible and lightweight, it is suited to all applications and can be installed in all types of switchboards.

Supplied in a kit made up of three different colored pieces to make phase identification easy, it comes with coils with three different diameters and lengths and measures a wide current interval (from 20 to 4000 A).

Benefits

- **Adaptability and flexibility.** Effective for a wide range of currents and available in three different lengths, it can be installed in existent applications and/or with reduced space, on single cables, on cable bundles or high capacity busbars.
- **Accuracy.** The lack of a ferromagnetic core improves measurement accuracy in a wide range of currents and eliminates possible interferences.
- **Simplified system.** The current calculation integrator is included in the EMI3P-Y2R0 analyzer, thus neither additional wiring nor space are required; the sensor is directly connected to the analyzer.
- **Fast installation.** The opening/closing mechanism makes installation fast even in existent applications. The analyzer only requires two cables to be connected per sensor and is made easy by the color (black, orange, blue) on the connection cable.

Operating principle

The Rogowski sensor is an alternating current measurement device.

Unlike current sensors with ferromagnetic core, the linearity of the Rogowski sensor makes it specifically indicated to measure high currents.

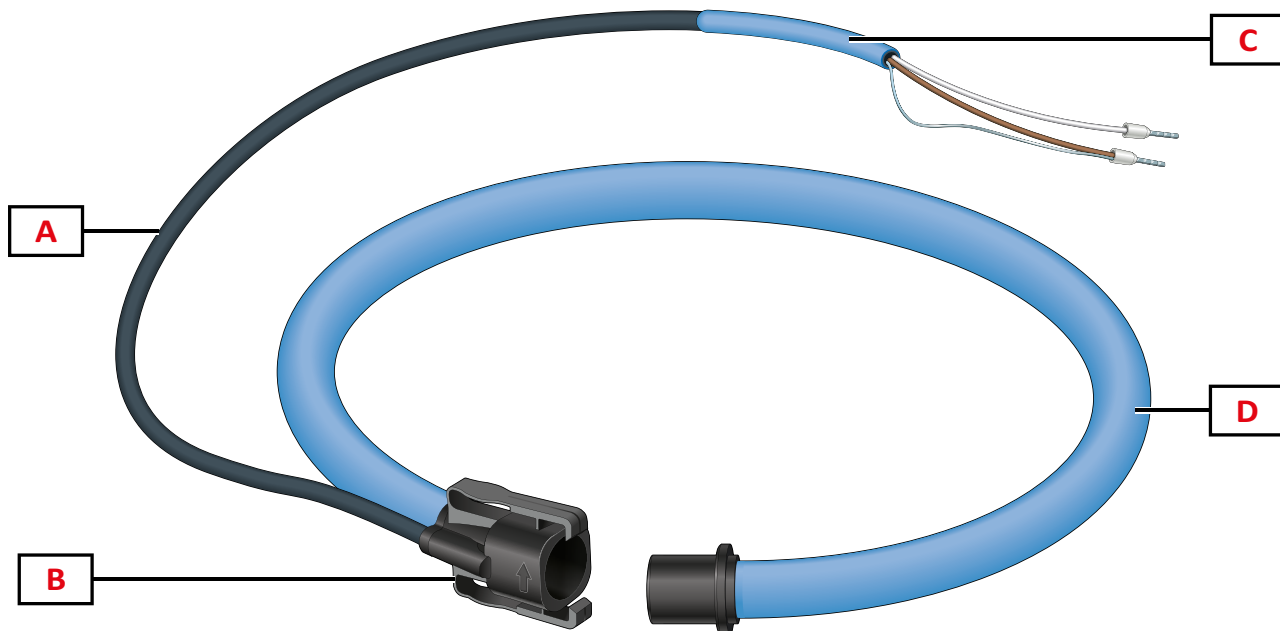
Its operating principle is very simple: a voltage signal dependent on the primary current trend, which can be reconstructed using an integration process, is generated at the ends of the coil positioned around a conductor. Unlike traditional Rogowski sensors, EMI3P-ROG does not require an external integrator with additional power supply since measurement is entirely controlled by the analyzer.

Applications

Indicated for retail and industrial solutions, especially for retrofitting and/or contexts with reduced available space where installing a current sensor with ferromagnetic core is difficult.

It is especially indicated to measure:

- industrial or building system load
- single machine load with high current absorption

 **Structure**

Area	Description
A	Analyzer connection cable
B	Coil opening/closing mechanism
C	Colored sensor identification
D	Coil

Features

General

Material	Coil and connection cable: thermoplastic rubber, self-extinguishing degree V-0 (UL 94) Opening/closing mechanism: PA6, self-extinguishing V-0 (UL 94)
Protection degree	IP52
Connection cable	Type: 1000 V (UL Style 20940) External diameter: 5 mm Cables: 2, section 0.1288 mm ² (26 AWG) Length: 2 m (customizable up to 50 m, upon request subject to minimum quantities)
Overvoltage category	Cat. III 1000 V @50/60 Hz Cat. IV 600 V @50/60 Hz
Pollution degree	2
Insulation	double electrical insulation
Mounting	Cable Busbar

Type selection: dimensions (mm) and weight


Code key	Coil length (mm)	Coil thickness (mm)	External coil diameter (mm)	Maximum conductor diameter (mm)	Weight (g)
EMI3P-ROG4-4kA	400	12	139	115	130
EMI3P-ROG6-4kA	600	12	203	179	160
EMI3P-ROG9-4kA	900	12	299	275	200

Environmental specifications

Operating temperature	From -20 to +70 °C/from -4 to +158 °F
Storage temperature	From -20 to +70 °C/from -4 to +158 °F
Maximum altitude	2000 m

NOTE: R.H. < 85 % non-condensing.

Conformity

Directives	2014/35/EU (LVT - Low Voltage)
Standards	EN61010-1
Approvals	 (available after having completed the approval process)

Electrical specifications

Primary current	From 20 to 4000 A
Output signal	100 mV/kA @50 Hz
Operating frequency	From 45 to 65 Hz
Accuracy	±1%
Linearity	±0.2%
Position sensitivity	±2% (primary conductor near the opening/closing mechanism)
External field influence	±0.5% maximum
Temperature drift	±0.07% per °C
Internal resistance	30 Ω/400 mm
Dielectric strength	7.4 kV ac for 1 minute (connection cable wires and coil)

Connection Diagrams

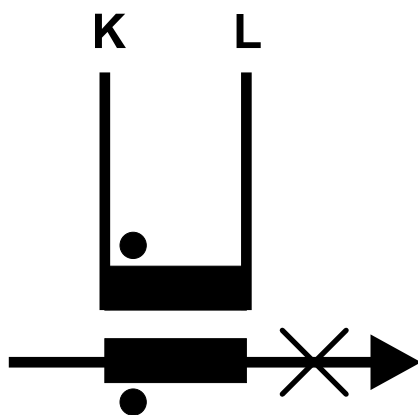


Fig. 1 Current connection

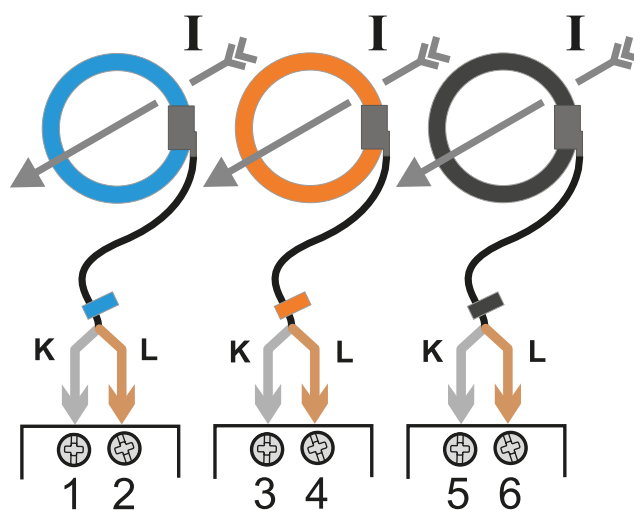


Fig. 2 Connection with EMI3P-Y2R0,
K=white, L=brown